

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A two-dimensional photonic crystal having a slab-shaped body in which modified refractive index areas are cyclically arranged and composed of holes passing through the slab-shaped body, the modified refractive index areas having the same shape and having a refractive index that differs from that of the body, wherein:

a plane shape of each modified refractive index area is a polygon whose corners are removed and an area fraction FF of the modified refractive index areas in the body is equal to or larger than 0.5 and is equal to or smaller than 0.85.

2. (Withdrawn) The two-dimensional photonic crystal according to claim 1, wherein:

the modified refractive index area has a 3m-symmetrical shape.

3. (Withdrawn) The two-dimensional photonic crystal according to claim 2, wherein:

the polygon is an equilateral triangle.

4. (Previously Presented) The two-dimensional photonic crystal according to claim 1, wherein:

the corners are removed along an arc.

5. (Previously Presented) The two-dimensional photonic crystal according to claim 4, wherein:

the modified refractive index areas are arranged in a triangular lattice pattern;

the polygon is an equilateral triangle;

the refractive index of the body is within a range from 3.15 to 3.55; and

a radius r_a of the arc satisfies a following equation:

$$0 < r_a < [1.23(\text{FF}-0.34)^{0.5} - 1.28(\text{FF}-0.34) + 1.03(\text{FF}-0.34)^2],$$

where FF is an area fraction of the modified refractive index areas in the body.

6.-7. (Canceled)

8. (Withdrawn) The two-dimensional photonic crystal according to claim 1,

wherein:

each modified refractive index area consists of holes.

9. (Withdrawn) An optical waveguide device, comprising:

a two-dimensional photonic crystal according to claim 1, in which a linear defect of the modified refractive index areas is created.

10. (Withdrawn) An optical resonator device, comprising:

a two-dimensional photonic crystal according to claim 1, in which a point-like defect of the modified refractive index areas is created.

11. (Withdrawn) An optical multiplexer/demultiplexer, comprising:

a two-dimensional photonic crystal according to claim 1;
at least one optical waveguide including a linear defect of the modified refractive index areas created in the two-dimensional photonic crystal; and
at least one optical resonator including a point-like defect of the modified refractive index areas created in a vicinity of the optical waveguide.

12. (New) The two-dimensional photonic crystal according to claim 1, wherein a portion of the body between the modified refractive index areas has a polygon shape.